WHAT IS CLAIMED IS:

1. A data conversion apparatus performing octet deletion or bit deletion to data having a PPP configuration and being octet-inserted or bit-inserted.

2. A data conversion apparatus comprising:

deletion means for performing octet deletion or bit deletion to data having a PPP frame configuration and being octet-inserted or bit-inserted; and

additional information addition means for adding additional information including information for identifying a frame partition to the data octet-deleted or bit-deleted by said deletion means.

3. A data conversion apparatus comprising:

flag deletion means for deleting a flag from data having a PPP frame configuration and being octet-inserted or bit-inserted; and

deletion means for performing octet deletion or bit deletion to the data which is flag-deleted by said flag deletion means.

4. A data conversion apparatus comprising:

flag deletion means for deleting a flag from data having a PPP frame configuration and being octet-inserted or bit-inserted;

deletion means for performing octet deletion or bit deletion to the data flag-deleted by said flag deletion means; and

additional information addition means for adding additional information including information for identifying a frame partition to the data octet-deleted or bit-deleted by said deletion means.

A1 5. A data conversion apparatus performing octet deletion or bit deletion to data having a PPP frame configuration and being not octet-inserted or not bit-inserted.

A1 6. A data conversion apparatus comprising:

additional information deletion means for deleting additional information from data having a frame configuration in which said additional information including information for identifying a frame partition is added to a PPP frame configuration and being not octet-inserted or not bit-inserted; and

insertion means for performing octet insertion or bit insertion to the data deleted of additional information by said additional information deletion means.

A1 7. A data conversion apparatus comprising:

insertion means for performing octet insertion or bit insertion to data having a frame configuration flag-deleted from a PPP frame configuration and being not

octet-inserted or not bit-inserted; and

flag addition means for adding a flag to the data octet-inserted or bit-inserted by said insertion means.

8. A data conversion apparatus comprising:

additional information deletion means for deleting additional information from data having a frame configuration in which said additional information including information for identifying frame partition is added to a frame configuration flag-deleted from a PPP frame configuration and being not octet-inserted or not bit-inserted;

insertion means for performing octet insertion or bit insertion to the data additional information-deleted by said additional information deletion means; and

flag addition means for adding a flag to the data octet-inserted or bit-inserted by said insertion means.

9. A data conversion apparatus converting data having a PPP frame configuration and being not octet-inserted or not bit-inserted into data having a frame configuration of data link layer protocol other than PPP.

10. A data conversion apparatus converting data having a frame configuration in which additional information including information for identifying a frame partition is added to a PPP frame configuration and being not

octet-inserted or not bit-inserted into data having a frame configuration of data link layer protocol other than PPP.

11. A data conversion apparatus converting data having a frame configuration flag-deleted from a PPP frame configuration and being not octet-inserted or not bit-inserted into data having a frame configuration of data link layer protocol other than PPP.

12. A data conversion apparatus converting data having a frame configuration in which additional information including information for identifying frame partition is added to a frame configuration flag-deleted from a PPP frame configuration and being not octet-inserted or not bit-inserted into data having a frame configuration of data link layer protocol other than PPP.

13. A data conversion apparatus converting data having a frame configuration of data link layer protocol other than a PPP into data having a PPP frame configuration and being not octet-inserted or not bit-inserted.

14. A data conversion apparatus converting data having a frame configuration of data link layer protocol other than a PPP into data having a frame configuration in which additional information including information for identifying frame partition is added to a PPP frame

configuration and being not octet-inserted or not bit-inserted.

15. A data conversion apparatus converting data having a frame configuration of data link layer protocol other than a PPP into data having a frame configuration flag-deleted from a PPP frame configuration and being not octet-inserted or not bit-inserted.

16. A data conversion apparatus converting data having a frame configuration of data link layer protocol other than a PPP into data having a frame configuration flag-deleted from a PPP frame configuration to which additional information including information for identifying frame partition is added and being not octet-inserted or not bit-inserted.

17. A signal having a PPP frame configuration and including data not octet-inserted or not bit-inserted.

18. A signal having a PPP frame configuration to which additional information including information for identifying frame partition is added and including data not octet-inserted or not bit-inserted.

19. A signal having a frame configuration of flag-deleted from a PPP frame configuration and including data not

octet-inserted or not bit-inserted.

20. A signal having a frame configuration of flag-deleted from a PPP frame configuration to which additional information including information for identifying frame partition is added and including data not octet-inserted or not bit-inserted.

21. A data conversion method performing octet deletion or bit deletion to data having a PPP frame configuration and being octet-inserted or bit-inserted.

22. A data conversion method comprising:

a deletion step for performing octet deletion or bit deletion to data having a PPP frame configuration and being octet-inserted or bit-inserted; and

an additional information addition step for adding additional information including information for identifying a frame partition to the data octet-deleted or bit-deleted by said deletion step.

23. A data conversion method comprising:

a flag deletion step for deleting a flag from data having a PPP frame configuration and being octet-inserted or bit-inserted; and

a deletion step for performing octet deletion or bit deletion to the data flag-deleted by said flag deletion

step.

24. A data conversion method comprising:

a flag deletion step for deleting a flag from data having a PPP frame configuration and being octet-inserted or bit-inserted;

a deletion step for performing octet deletion or bit deletion to the data flag-deleted by said flag deletion step; and

an additional information addition step for adding additional information including information for identifying a frame partition to the data octet-deleted or bit-deleted by said deletion step.

25. A data conversion method performing octet insertion or bit insertion to data having a PPP frame configuration and being not octet-inserted or not bit-inserted.

26. A data conversion method comprising:

an additional information deletion step for deleting additional information from data having a PPP frame configuration to which said additional information including information for identifying a frame partition and being octet-inserted or bit-inserted is added; and

an insertion step for performing octet insertion or bit insertion to the data additional information-deleted by said additional information deletion step.

27. A data conversion method comprising:

an insertion step for performing octet insertion or bit insertion to data having a frame configuration flag-deleted from a PPP frame configuration and being not octet-inserted or not bit-inserted; and

a flag addition step for adding a flag to the data octet-inserted or bit-inserted by said insertion step.

28. A data conversion method comprising:

an additional information deletion step for deleting additional information from data having a frame configuration flag deleted from a PPP frame configuration to which said additional information including information for identifying a frame partition is added and being not octet-inserted or not bit-inserted;

an insertion step for performing octet insertion or bit insertion to the data additional information-deleted by said additional information deletion step; and

a flag addition step for adding a flag to the data octet-inserted or bit-inserted by said insertion step.

29. A data conversion method converting data having a PPP frame configuration and being not octet-inserted or not bit-inserted into data having a frame configuration of data link layer protocol other than PPP.

30. A data conversion method converting data having a frame configuration in which additional information including information for identifying frame partition is added to a PPP frame configuration and being not octet-inserted or not bit-inserted into data having a frame configuration of data link layer protocol other than PPP.

31. A data conversion method for converting data having a frame configuration flag-deleted from a PPP frame configuration and being not octet-inserted or not bit-inserted into data having a frame configuration of data link layer protocol other than PPP.

32. A data conversion method converting data having a frame configuration in which additional information including information for identifying frame partition is added to a frame configuration flag-deleted from a PPP frame configuration and being not octet-inserted or not bit-inserted into data having a frame configuration of data link layer protocol other than PPP.

33. A data conversion method converting data having a frame configuration of data link layer protocol other than PPP into data having a PPP frame configuration and being not octet-inserted or not bit-inserted.

34. A data conversion method converting data having a

frame configuration of data link layer protocol other than PPP into data having a frame configuration in which additional information including information for identifying frame partition is added to a PPP frame configuration and being not octet-inserted or not bit-inserted.

35. A data conversion method converting data having a frame configuration of data link layer protocol other than PPP into data having a frame configuration flag-deleted from a PPP frame configuration and being not octet-inserted or not bit-inserted.

36. A data conversion method converting data having a frame configuration of data link layer protocol other than PPP into data having a frame configuration flag-deleted from a PPP frame configuration to which additional information including information for identifying frame partition is added and being not octet-inserted or not bit-inserted.

37. A DCE transmitting a LCP echo reply to one of two apparatus performing data communication based on PPP, when said DCE receives a LCP echo request transmitted by said one apparatus to the other apparatus.

38. A DCE discarding a LCP discard request, when said DCE

receives said LCP discard request transmitted by one of two apparatus performing data communication based on PPP to the other.

39. A gateway transmitting a LCP echo reply to one of two apparatus performing data communication based on PPP, when said gateway receives a LCP echo request transmitted by said one apparatus to the other apparatus.

40. A gateway discarding a LCP discard request, when said gateway receives said LCP discard request transmitted by one of two apparatus performing data communication based on PPP to the other.

41. A communication apparatus located between another communication apparatus of self-node and a communication apparatus of other node,

producing a setting request packet according to a setting rejection packet or a setting negation packet and transmitting said setting request packet to said another communication apparatus of self-node, when said communication apparatus receives said setting rejection packet or said setting negation packet from said another communication apparatus of self-node, after intermediating a setting request packet from said communication apparatus of other node to said another communication apparatus of self-node.

42. The communication apparatus as claimed in Claim 41, wherein said communication apparatus notifies setting rejection or setting negation to said communication apparatus of other node by transmitting only information included in a setting rejection packet or a setting negation packet to said communication apparatus of other node, when said communication apparatus receives said setting rejection packet or said setting negation packet from said another communication apparatus of self-node, after intermediating a setting request packet from said communication apparatus of other node to said another communication apparatus of self-node.

43. The communication apparatus as claimed in Claim 41, wherein said communication apparatus terminates a setting identification packet when said communication apparatus receives said setting identification packet after intermediating a setting request packet from said communication apparatus of other node to said another communication apparatus of self-node and receiving a setting rejection packet or a setting negation packet from said another communication apparatus of self-node, and said communication apparatus does not terminate a setting identification packet when said communication apparatus receives said setting identification packet without receiving a setting rejection packet or a setting negation

packet from said another communication apparatus of self-node after intermediating a setting request packet from said communication apparatus of other node to said another communication apparatus of self-node.

44. A communication apparatus located between another communication apparatus of self-node and a communication apparatus of other node,

terminating a setting request packet, when said communication apparatus receives said setting request packet after intermediating a setting request packet from said another communication apparatus of self-node to said other node communication apparatus and a notification of setting rejection or setting negation from said other node communication apparatus to said another communication of self-node.

45. The communication apparatus as claimed in Claim 44, wherein said communication apparatus produces a setting rejection packet or a setting negation packet and transmits it to said another communication apparatus of self-node, when said communication apparatus receives a notification of setting rejection or setting negation from said communication apparatus of other node after intermediating a setting request packet from said another communication apparatus of self-node to said other node communication apparatus.

46. The communication apparatus as claimed in Claim 44, wherein said communication apparatus produces a setting identification packet and transmits it to said another communication apparatus of self-node, when said communication apparatus receives from said another communication apparatus of self-node, all of setting request packets according to notifications of setting rejection or setting negation from said communication apparatus of other node to said another communication of self-node after intermediating setting request packets from said another communication apparatus of self-node to said other node communication apparatus and said notifications.

47. A communication apparatus located between another communication apparatus of self-node and a communication apparatus of other node,

producing an end identification packet and transmitting it to said another communication apparatus of self-node after intermediating a notification of end request from said another communication apparatus of self-node to said other node communication.

48. The communication apparatus as claimed in Claim 47, wherein said communication apparatus produces an end request signal and transmits it to said communication

apparatus of other node, when said communication apparatus receives an end request packet from said another communication apparatus of self-node.

49. The communication apparatus as claimed in Claim 47, wherein said communication apparatus produces an end request packet and transmits it to said another communication apparatus of self-node, when said communication apparatus receives a notification of end identification from said communication apparatus of other node after intermediating a notification of end request from said another communication apparatus of self-node to said communication apparatus of other node.

50. The communication apparatus as claimed in Claim 49, wherein said communication apparatus terminates an end identification packet, when said communication apparatus receives said end identification packet from said another communication apparatus of self-node after transmitting said produced end request packet.

51. A communication apparatus located between another communication apparatus of self-node and a communication apparatus of other node,

terminating an end identification packet, when said communication apparatus receives said end identification packet from said another communication apparatus of

self-node after intermediating a notification of end request from said other node communication apparatus to said another communication apparatus of self-node.

52. The communication apparatus as claimed in Claim 51, wherein said communication apparatus produces an end request packet and transmits it to said another communication apparatus of self-node, when said communication apparatus receives a notification of end request from said other node communication apparatus.

53. The communication apparatus as claimed in Claim 51, wherein said communication apparatus produces an end identification signal and transmits it to said communication apparatus of other node, when said communication apparatus receives an end request packet from said another communication apparatus of self-node after intermediating a notification of end request from said other node communication apparatus to said another communication apparatus of self-node.

54. The communication apparatus as claimed in Claim 53, wherein said communication apparatus produces an end identification packet and transmits it to said another communication apparatus of self-node after transmitting said produced end identification signal.

55. A communication apparatus located between another communication apparatus of self-node and a communication apparatus of other node,

terminating an echo request, producing an echo response packet and transmits it to said another communication apparatus of self-node, when said communication apparatus receives said echo request packet from said another communication apparatus of self-node to said other node communication apparatus.

56. The communication apparatus as claimed in Claim 41, 44, 47, 51, or 55, wherein said communication apparatus is a mobile station.